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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,546	12/10/2004	Wayne Francis Callen	23003-0001	5667
26587	7590	10/12/2006		
MCNEES, WALLACE & NURICK LLC 100 PINE STREET P.O. BOX 1166 HARRISBURG, PA 17108-1166			EXAMINER AMRANY, ADI	
			ART UNIT 2836	PAPER NUMBER

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/517,546		CALLEN ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Adi Amrany		2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/27/05</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 19-23 and 25-28 have been considered but are moot in view of the new ground(s) of rejection.

With respect to claim 24, Applicants' argue that Muelleman (US 5,448,443) does not teach or suggest a floating conductor. This argument is not persuasive, as Muelleman discloses an earth ground reference conductor (figures 12-17, items EG, SG; column 9, lines 7-20 and 40-42).

### ***Information Disclosure Statement***

2. The objection made to the Information Disclosure Statement in the non-final rejection (May 19, 2006) is withdrawn. The references were provided with English language abstracts and/or translations. The foreign references listed in the IDS were considered. Several references did not contain any information other than a title and a patent number. These references, most notably the French patents, do not include an English translation of the specification or the abstract, and were crossed off on the IDS. Further, several of the references contain subject matter unrelated to the present application. These references were crossed off on the IDS as well.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Muelleman (US 5,448,443).

Muelleman discloses a wiring system (figure 1) for carrying a mains supply from a mains source having at least two mains conductors (figure 1, items L and N; column 3, lines 54-58), the system being installed at a site and including:

a transformer (figure 1, item T1; column 3, lines 49-53) located at or near the site and having one or more primary windings for connecting to the mains conductors and one or more secondary windings to provide a site voltage that is substantially equal to the mains supply (1:1 winding ration, column 3, line 54);

at least two site conductors (figure 1, items L' and N'; column 3, lines 63-66) that are installed at the site for electrically connecting with the one or more secondary windings for distributing the site voltage to predetermined locations about the site;

and a floating conductor (figure 1, item SG; column 3, line 66 to column 4, line 2; column 9, lines 7-20 and 40-42) that is isolated from the other conductors in normal use, the floating conductor being associated with a load installed at the site for providing a reference voltage with respect to one or more of the site conductors (column 4, lines 1-2).

As discussed above, the SG conductor is an earth ground reference point. It is inherent that the ground would be isolated from the other conductors in order to prevent short circuits.

5. Claims 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Paine (US 3,579,041).

With respect to claim 25, Paine discloses a control circuit (figure 1, item 10; column 1, lines 29-33) including:

- at least two input terminals (figure 1, item 11; column 3, lines 58-60) for electrically connecting with a power source;

- at least two output terminals (figure 1, item 12; column 3, lines 58-60) for electrically connecting with a load;

- a switching relay (figure 1, item 20; column 1, lines 45-64) having a switching coil (figure 1, item 21) that is selectively energized to progress the relay between two modes wherein: in one of the modes the input and output terminals are respectively electrically connected for allowing the load to receive power from the source via the switching relay; and in the other mode the input and output terminals are electrically disconnected for preventing the source from supplying power to the load via the switching relay (column 1, lines 14-18); and

- a sensor relay (figure 1, item 30; column 1, line 65 to column 2, line 4) that is responsive to a predetermined condition for energizing the coil of the switching relay.

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With respect to claim 26, Paine discloses the control circuit according to claim 25, and further discloses the sensor relay has a low voltage coil that is energized in response to the fault condition (figure 1, item 31; column 1, lines 72-73).

With respect to claim 27, Paine discloses the control circuit according to claim 26, and further discloses the low voltage coil is energized by a DC voltage (figure 1, item 11). The sensing coil is connected to the input DC voltage node.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 19-23 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paine in view of Ahuja (WO 86/02786) from applicants' Information Disclosure Statement.

With respect to claim 19, Paine discloses a control circuit (figure 1, item 10; column 1, lines 29-33) including:

at least two input terminals (column 3, lines 58-60) for electrically connecting with a power source;

at least two output terminals (column 3, lines 58-60) for electrically connecting with a load;

a sensor (figure 1, item 30; column 1, line 65 to column 2, line 4) having a sensor relay that is energized in response to a reference signal being within a predetermined range, wherein the sensor provides a sensor signal in response to the sensor relay being energized; and

a switching device (figure 1, item 20; column 1, lines 45-64) having a switching relay that is responsive to the sensor signal for progressing between a first mode and a second mode wherein: in the first mode the input and output terminals are respectively electrically connected for allowing the load to receive power from the source via the switching relay; and in the second mode the input and output terminals are electrically disconnected for preventing the source from supplying power to the load via the switching relay (column 2, lines 9-11).

Paine disclose that the control circuit may be used in a three-phase A.C. system. It is inherent in an AC system that there would be at least two input terminals and two output terminals to conduct the full A.C. waveform.

Paine does not expressly disclose the sensor reference signal being derived from a voltage differential between one or more of the conductors and a reference point that is electrically isolated from the conductors when in use.

Ahuja discloses a control circuit having at least two input and two output terminals, and a switching relay (item 16; abstract). Ahuja further discloses a current sensing device (item 15) that generates a voltage signal that is proportional to the current. The voltage differential created by the sensor (15) is inherently judged against

a reference point (voltage "potential"), and it would be obvious to one skilled in the art that the reference point would be earth ground.

At the time of the invention by applicants, it would have been obvious to one skilled in the art to combine the control circuit disclosed in Paine with the voltage potential sensor disclosed in Ahuja.

The motivation for doing so would have been to protect the sensor for an over-current by sensing a voltage value (Ahuja abstract, lines 1-3).

With respect to claim 20, Paine and Ahuja disclose the circuit according to claim 19. Paine further discloses the sensor relay senses the DC input voltage that is protected against voltage surges (figure 1, item 31; column 2, lines 37-48), but does not expressly disclose the sensor relay is a low voltage DC relay. It would have been obvious to one skilled in the art to substitute a low voltage DC relay in place of the Paine sensing relay, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (CCPA 1955).

With respect to claim 21, Paine and Ahuja disclose the circuit according to claim 20, and Paine further discloses the switching relay is a mains voltage relay (column 1, lines 45-47).

With respect to claim 22, Paine and Ahuja disclose the circuit according to claim 20. Paine discloses an improvement over the prior art control circuit that comprises a *DC voltage* relay (column 1, lines 51-53).



With respect to claim 23, Paine and Ahuja disclose the circuit according to claim 19, and Paine further discloses the sensor signal is an AC signal or derived from an AC signal (column 3, lines 58-60).

With respect to claim 28, Paine discloses the control circuit according to claim 27, and further, it would be obvious to one skilled in the art to have the low voltage coil energized by a DC voltage of greater than 1 volt, because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
  - a. Kahle (US 5,270,576) discloses a control circuit comprising a sensing relay (24) and a switching relay (54) for selectively coupling the output and input terminals depending on a sensed input power level.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on weekdays, from 9am-5pm.

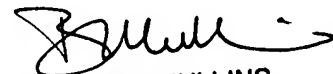
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x36. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA

  
BURTON S. MULLINS  
PRIMARY EXAMINER